



**Mid-Ohio Educational Service Center**  
**Science Course of Study**  
**Ninth Grade – Vocabulary Definitions**

(Ohio Department of Education. 2003. K-12 Science Academic Content Standards)

acceleration	The rate of change of velocity with respect to time.
acid	A substance that dissolves in water with the formation of hydrogen ions and reacts with a base to form a salt and water. It neutralizes alkalis, dissolves some metals, and turns litmus red; typically, a corrosive and sour-tasting liquid.
asteroid	A small rocky body orbiting the sun.
atmosphere	The gaseous envelope surrounding the earth; consists of oxygen, nitrogen and other gases, extends to a height of about 40,744 km (22,000 miles), and rotates with Earth.

atom	The smallest particle of an element that can exist either alone or in combination.
atomic number	The number of protons in the nucleus of an atom.
base	A substance that dissolves in water with the formation of hydroxyl ions and reacts with an acid to form a salt and water; turns litmus paper blue.
characteristic	A distinguishing trait, feature, quality or property.
chemical reaction	A process that involves rearrangement of the molecular or ionic structure of a substance, as opposed to a change in physical form or a nuclear reaction.

comet	A celestial body that consists of a fuzzy head usually surrounding a bright nucleus, that has a usually highly eccentric orbit, and that often, when in the part of its orbit near the sun, develops a long tail which points away from the sun.
conduction	Process by which heat or electricity is transmitted through a material or body without movement of the medium itself.
convection	The circulatory motion that occurs in a fluid at a non-uniform temperature owing to the variation of its density and the action of gravity.
current	Continuous flow as of air, water or electric charge.

design	To create, fashion, execute or construct according to plan.
electric force	A force that exists between two charged objects.
electricity	A form of energy resulting from the existence of charged particles, either statically as an accumulation of charge or dynamically as a current.
electromagnetic radiation	A kind of radiation including visible light, radio waves, gamma rays and x-rays in which electric and magnetic fields vary simultaneously.
electromagnetic spectrum	The entire range of wavelengths or frequencies of electromagnetic radiation extending from gamma rays to the longest radio waves and including visible light.

electron	A stable subatomic particle with negative electrical charge, found in all atoms and acting as the primary carrier of electricity in solids.
element	Any of more than 100 fundamental substances that consist of atoms of only one kind and that singly or in combination constitute all matter.
endothermic	Characterized by or formed with absorption of heat.
energy	The capacity for doing work, can be in various forms such as nuclear, sound, thermal and light.
evidence	Facts or observations on which a conclusion can be based.

exothermic	Characterized by or formed with liberation of heat.
faulting	To fracture so as to produce a geologic fault.
fission	The splitting of an atomic nucleus resulting in the release of large amounts of energy.
folding	Causing rock strata to undergo bending or curvature.
force	An influence, that if applied to a free body, results chiefly in an acceleration of that body in the direction of its application.
fossil	Remnant, impression or trace of an organism of past geologic ages that has been preserved in the Earth's crust.

fossil fuel	A fuel (such as coal, oil or natural gas) that is formed in Earth from plant or animal remains.
frame of reference	An arbitrary set of axes with reference to which the position or motion of something is described or physical laws are formulated.
friction	The force that resists relative motion between two bodies in contact.
fusion	The union of atomic nuclei to form heavier nuclei resulting in the release of enormous quantities of energy.
gravitation	A force manifested by acceleration toward each other of two free material particles or bodies, or of radiant-energy quanta.

gravity	The gravitational attraction of the mass of the Earth, the moon or a planet for bodies at or near its surface.
igneous	Relating to, resulting from, or suggestive of the intrusion or extrusion of magma or volcanic activity.
ion	An atom or group of atoms that carries a positive or negative electric charge as a result of having lost or gained one or more electrons.
isotope	Any of two or more species of atoms of a chemical element with the same atomic number and nearly identical chemical behavior, but with differing atomic mass or mass number and different physical properties.

kinetic energy	Energy associated with motion.
landform	A natural feature of a land surface.
life	An organism that has the capacity for metabolism, growth, reaction to stimuli and reproduction.
liquid	A fluid (such as water) that has no independent shape but has a definite volume, does not expand indefinitely and that is only slightly compressible.

lithosphere	The solid part of a celestial body (such as Earth), specifically, the outer part of the solid Earth composed of rock essentially like that exposed at the surface and usually considered to be about 80 kilometers (50 miles) in thickness.
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magma	Molten rock material within the Earth from which igneous rock results by cooling.
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magnetic reversal	Periods of time in which there was a reversal in direction of the Earth's magnetic field.
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mass	The property of a body that is a measure of its inertia and that is commonly taken as a measure of the amount of material it contains causing it to have weight in a gravitational field.
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matter	Material substance that occupies space, has mass and is composed of atoms consisting of protons, neutrons and electrons that constitutes the observable universe, and that is interchangeable with energy.
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metamorphism	A change in the constitution of rock; specifically, a pronounced change affected by pressure, heat and water that results in a more compact and more highly crystalline condition.
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method	A systematic procedure, technique or mode of inquiry employed by or proper to a particular discipline or art.
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mixture	A portion of matter consisting of two or more components in varying proportions that retain their own properties.
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model	A description or analogy used to help visualize something (such as an atom) that cannot be directly observed.
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molecule	The smallest particle of a substance that retains all the properties of the substance and is composed of one or more atoms.
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motion	An act, process or instance of changing position through time.
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neutral	Neither acidic nor basic (as in pH).
neutrons	An uncharged elementary particle that has a mass nearly equal to that of the proton and is present in atomic nuclei.
nuclear	Used in or produced by a nuclear reaction; referring to particles or properties of an atomic nucleus.
nuclear reaction	A change in the identity or characteristics of an atomic nucleus that results when it is bombarded with an energetic particle.
nucleus	1. The positively charged central portion of an atom that comprises nearly all of the atomic mass and that consists of protons and neutrons. 2. The

	portion of a eukaryotic cell that is surrounded by a nuclear membrane and contains DNA.
observe	To watch carefully, especially with attention to details or behavior for the purpose of arriving at a judgment.
particle	Any of the basic units of matter and energy (such as a molecule, atom, proton, electron or photon).
pattern	A reliable sample of traits, acts, tendencies or other observable characteristics.
periodic table	An arrangement of chemical elements based on the periodic law.
pH scale	A numerical measure of the acidity or alkalinity of a chemical solution.

planet	Any of the large bodies that revolve around the sun in the solar system.
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potential energy	The energy that matter has because of its position or because of the arrangement of atoms or parts.
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proton	A stable subatomic particle occurring in all atomic nuclei with a positive electric charge equal in magnitude to that of an electron.
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radiation	The transfer of heat by radiation (such as energy transfer). The process of emitting radiant energy in the form of waves or particles (such as particle emission).
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significant figure	Each of the digits of a number that are used to express it to the required degree of accuracy.
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solid	A substance that does not flow perceptibly under moderate stress, has a definite capacity for resisting forces (such as compression or tension) that tend to deform it, and under ordinary conditions retains a definite size and shape.
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star	A natural luminous body visible in the sky, especially at night.
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system	1. A group of body organs that together perform one or more vital functions. 2. An organized group of devices, parts or factors that together perform a function or drive a process (weather systems, mechanical systems).
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technology	Human innovation in action that involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities. The innovation, change, or modification of the natural environment to satisfy perceived human needs and wants.
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theory	A supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained.
transform	To change in composition or structure.
velocity	The rate of change of position and direction with respect to time.
wave	A disturbance or variation that transfers energy progressively from point to point in a medium, and that may take the form of an elastic deformation or of a variation of pressure, electric or magnetic intensity, electric potential, or temperature.